

Novinky v T_EXovém světě

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2. – 4. července 2024

<https://archive.org/details/2024-statisticke-dny-striz>

Užit balíček simpleicons

Osnova

Pokusím se svými slovy okomentovat a přiblížit publikované články

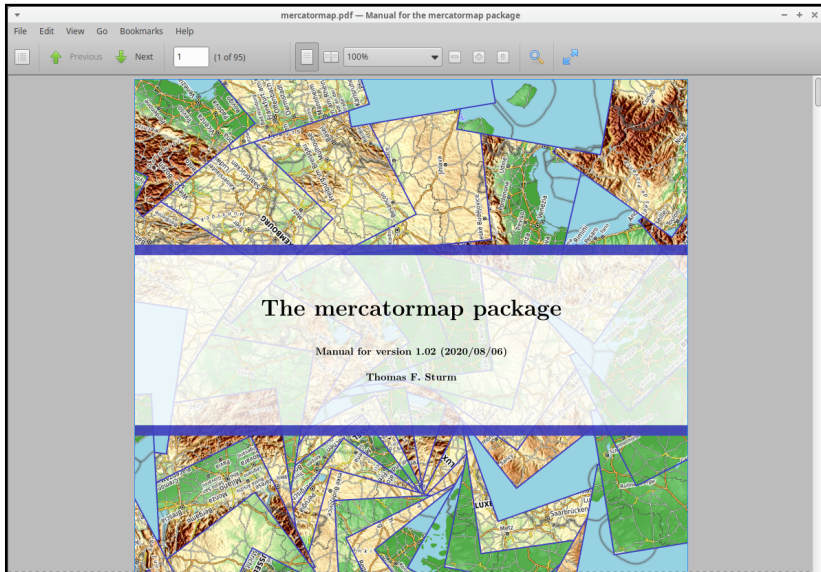
- ▶ *Novinky v $T_{E}X$ ovém světě z roku 2020,*
- ▶ *Postřehy nejen k sazbě matematiky z 2020,*
- ▶ *PF2021! aneb Není šum jako šum z 2020, a,*
- ▶ *Nové a aktualizované balíčky v $T_{E}X$ ovém světě z roku 2024,*

v číslech Informačního bulletinu České statistické společnosti, <https://www.statspol.cz/informacni-bulletin/on-line-verze/>.

Novinky z dřívějšího I.

- ▶ Metapost umí generovat SVG.
- ▶ Balíček mercatormap.
- ▶ Balíček emoji.

Balíček mercatormap



Balíček emoji

emoji.docx.pdf — The emoji package: Emoji support in LuaLaTeX










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Table 13: Cat-face (9)

Emoji	Fullname	Aliases	Description	Codepoints	Version
	grinning-cat	smiley-cat	Grinning cat	1F63A	E0.6
	grinning-cat-with-smiling-eyes	smile-cat	Grinning cat with smiling eyes	1F638	E0.6
	cat-with-tears-of-joy	joy-cat	Cat with tears of joy	1F639	E0.6
	smiling-cat-with-heart-eyes	heart-eyes-cat	Smiling cat with heart-eyes	1F63B	E0.6
	cat-with-wry-smile	snirk-cat	Cat with wry smile	1F63C	E0.6
	kissing-cat		Kissing cat	1F63D	E0.6
	weary-cat	scream-cat	Weary cat	1F640	E0.6
	crying-cat	crying-cat-face	Crying cat	1F63F	E0.6
	pouting-cat		Pouting cat	1F63E	E0.6

Novinky z dřívějška II.

- ▶ Balíček mathastext, ukázky jsou na <http://jf.burnol.free.fr/showcase.html>.
- ▶ V ConT_EXtu vzniká pravolevá sazba matematiky a měněné znaky, např. úhel u odmocniny.
- ▶ První pokusy s barevnými písmy, viz <https://www.colorfonts.wtf/>.
- ▶ Vtipné jsou balíčky chickenize a typewriter.
- ▶ V článku ukazují užití Lua na obarvení proměnných automatem.

Písma ze serveru www.colorfonts.wtf

gilbert

Gilbert by Type With Pride

POPSKY

Popsky by Igor Petrovic

MEGAZERO

MEGAZERO by Alex Trochut

AIRES

Aires by Yai Salinas

ABELONE

Abelone by Maria Grälund

PLAYBOX

Playbox by Matt Lyon

BIXA COLOR

Bixa Color by NovoTypo & Roel Nieskens

BUNGEE

Bungee color by David Jonathan Ross

ONELINE GOLD

OneLine Bold by Roman Kaer

5 color fonts for Valentine's week

Text před výrazem s x , y a z .

$$x^2 + y^2 = z^2 \rightarrow x^2 = z^2 - y^2 \rightarrow x = \pm \sqrt{z^2 - y^2}$$

Text za výrazem s x , y a z .

Novinky z dřívějška III.

- ▶ Poukázal jsem na základní užití pseudonáhodných čísel v grafice přes TikZ.
- ▶ A některé náročnější pokusy přes Lua, viz <https://tex.stackexchange.com/questions/197389/how-to-fill-random-spaces-with-random-circles-in-tikz>.
- ▶ Vkládání podkladů do znaků přes `\pdfextension literal` a TikZ.

Ahoj světe!
Ahoj světe!

Ahoj světe!
Ahoj světe!

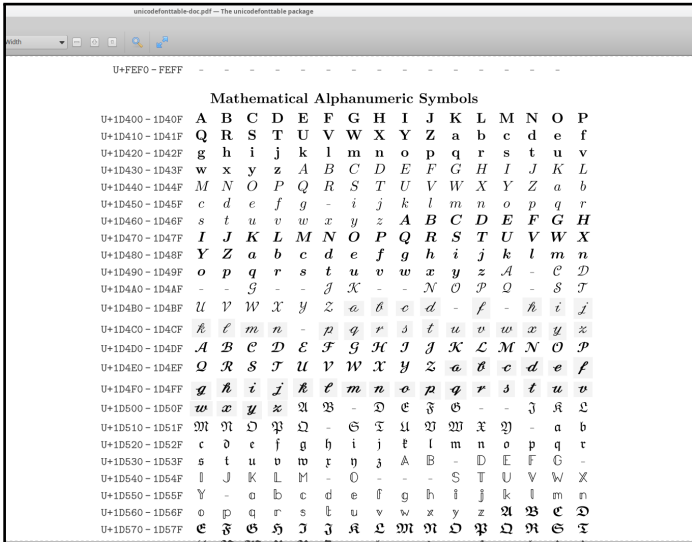
2023, novinky a aktualizace: nástroje

- ▶ V článku zmiňuji cestu, jak získat přehled nových a aktualizovaných balíčků z lokální databáze T_EXLive přes Python.
- ▶ V TikZ lze nově programovat animaci a získat obrázek z daného času. SVG na straně vstupu i výstupu zdá se použitelný.
- ▶ Nástroj xindex se snaží držet pravidel UCA. Češtinu už umí, slovenština je jen otázka času.

2023, novinky a aktualizace: balíčky

- ▶ Náhled na TTF/OTF písma lze získat přes `unicodfonttable`.
- ▶ Potěší balíček `simpleicons`. V úvodu. Vzal jsem soubor `bindings.tex` tohoto balíčku, mírně upravil a užil `sort -R` či `shuf`.
- ▶ Existuje řada nových balíčků na hry, namátkou balíček `ProfCollege`.
- ▶ Vedle něj balíčky `realhats` a `tilings` umožňují sázet aperiodický dílek (vyřešený letitý problém z března a května 2023).

unicodfonttalbe v akci, 1/3



unicodfonttalbe v akci, 2/3

unicodfonttalbe.doc.pdf - The unicodfonttalbe package

width

U+1D510 - 1D51F	W	M	D	P	Q	-	G	X	U	W	W	X	Y	-	a	b
U+1D520 - 1D52F	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
U+1D530 - 1D53F	s	t	u	v	w	x	y	z	A	B	-	D	E	F	G	-
U+1D540 - 1D54F	I	J	K	L	M	-	O	-	-	S	T	U	V	W	X	
U+1D550 - 1D55F	Y	-	a	b	c	d	e	f	g	h	i	j	k	l	m	n
U+1D560 - 1D56F	o	p	q	r	s	t	u	v	w	x	y	z	A	B	C	D
U+1D570 - 1D57F	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
U+1D580 - 1D58F	U	W	X	Y	Z	a	b	c	d	e	f	g	h	i	j	
U+1D590 - 1D59F	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
U+1D5A0 - 1D5AF	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
U+1D5B0 - 1D5BF	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d	e	f
U+1D5C0 - 1D5CF	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
U+1D5D0 - 1D5DF	w	x	y	z	A	B	C	D	E	F	G	H	I	J	K	L
U+1D5E0 - 1D5EF	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	a	b
U+1D5F0 - 1D5FF	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
U+1D600 - 1D60F	s	t	u	v	w	x	y	z	A	B	C	D	E	F	G	H
U+1D610 - 1D61F	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
U+1D620 - 1D62F	Y	Z	a	b	c	d	e	f	g	h	i	j	k	l	m	n
U+1D630 - 1D63F	o	p	q	r	s	t	u	v	w	x	y	z	A	B	C	D
U+1D640 - 1D64F	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
U+1D650 - 1D65F	U	V	W	X	Y	Z	a	b	c	d	e	f	g	h	i	j
U+1D660 - 1D66F	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
U+1D670 - 1D67F	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
U+1D680 - 1D68F	Q	R	S	T	U	V	W	X	Y	Z	a	b	c	d	e	f
U+1D690 - 1D69F	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

Frank Mittelbach

unicodfonttalbe v akci, 3/3

unicodfonttalbe.doc.pdf – The unicodfonttalbe package	
With	
Table 6: LM Math vs. NewCM Math, <i>cont.</i>	
	0 1 2 3 4 5 6 7 8 9 A B C D E F
U+1D6A0~1D6AF	w x y z i j - - A B Γ Δ E Z H Θ
U+1D6B0~1D6BF	I K Λ M N Ξ O Π P Θ Σ T Υ Φ X Ψ
U+1D6C0~1D6CF	Ω ∇ α β γ δ ε ζ η θ ι κ λ μ ν ξ
U+1D6D0~1D6DF	ο π ρ σ τ υ φ χ ψ ω θ ε ϑ ϣ ϕ
U+1D6E0~1D6EF	ϱ ϖ A B Γ Δ E Z H Θ I K Λ M N Ξ
U+1D6F0~1D6FF	O Π P Θ Σ T Υ Φ X Ψ Ω ∇ α β γ δ
U+1D700~1D70F	ε ζ η θ ι κ λ μ ν ξ ο π ρ σ τ
U+1D710~1D71F	υ φ χ ψ ω ϑ ε ϑ ϣ ϕ A B Γ Δ
U+1D720~1D72F	E Z H Θ I K Λ M N Ξ O Π P Θ Σ T
U+1D730~1D73F	Υ Φ X Ψ Ω ∇ α β γ δ ε ζ η θ ι κ
U+1D740~1D74F	λ μ ν ξ ο π ρ σ τ υ φ χ ψ ω ϑ
U+1D750~1D75F	ε ϑ ϣ ϕ ϱ ϖ A B Γ Δ E Z H Θ I K
U+1D760~1D76F	Λ M N Ξ O Π P Θ Σ T Υ Φ X Ψ Ω ∇
U+1D770~1D77F	α β γ δ ε ζ η θ ι κ λ μ ν ξ ο π
U+1D780~1D78F	ρ σ τ υ φ χ ψ ω ϑ ε ϑ ϣ ϕ ϱ ϖ
U+1D790~1D79F	A B Γ Δ E Z H Θ I K Λ M N Ξ O Π
U+1D7A0~1D7AF	P Θ Σ T Υ Φ X Ψ Ω ∇ α β γ δ ε ζ
U+1D7B0~1D7BF	η θ ι κ λ μ ν ξ ο π ρ σ τ υ φ
U+1D7C0~1D7CF	χ ψ ω ϑ ε ϑ ϣ ϕ ϱ ϖ F F - - 0 1
U+1D7D0~1D7DF	2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
U+1D7E0~1D7EF	8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3
U+1D7F0~1D7FF	4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9
Arabic Mathematical Alphabetic Symbols	
U+1EE00~1EE0F	1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6

Balíček tilings

tilings.pdf — The Tilings Pack

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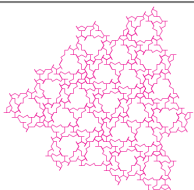
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Terminal - malpivo@malpivo-ThinkPad-T500: ~/Downloads/filmy/kombinatorika/2024-statisticka-drysladex

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```
\begin{tikzpicture}[
  every tile/.style={},
  every tile pic/.style={},
  every subcluster F/.style={draw=magenta, ultra thin},
  every subcluster P/.style={draw=magenta, ultra thin},
]
\pic[
  first tile/.style={transform shape},
  cluster type=subcluster,
  scale=3
] {decomposition={cluster}{3}{H}};
\end{tikzpicture}
```



5 Deforming Paths

T_EXLive 2024

- ▶ Postřehy z letošního roku,
- ▶ poznámky z připravovaného článku.

TL2024, práce s nástroji

- ▶ numerica, numerica-plus, numerica-tables,
- ▶ zx-calculus,
- ▶ resolsysteme,
- ▶ It3luabridge (Vít Novotný),
- ▶ functional,
- ▶ latex2pydata.

TL2024, uložení si podkladů

- ▶ `scontents`,
- ▶ `robust-externalize`,
- ▶ `hvextern`,
- ▶ `memoize`.

TL2024, užitečné nástroje

- ▶ Xindex + Lua-UCA (Michal Hoftich),
- ▶ lua-widow-control (Max Chernoff), více viz
- ▶ `https://tug.org/tc/devfund/criteria.html`.

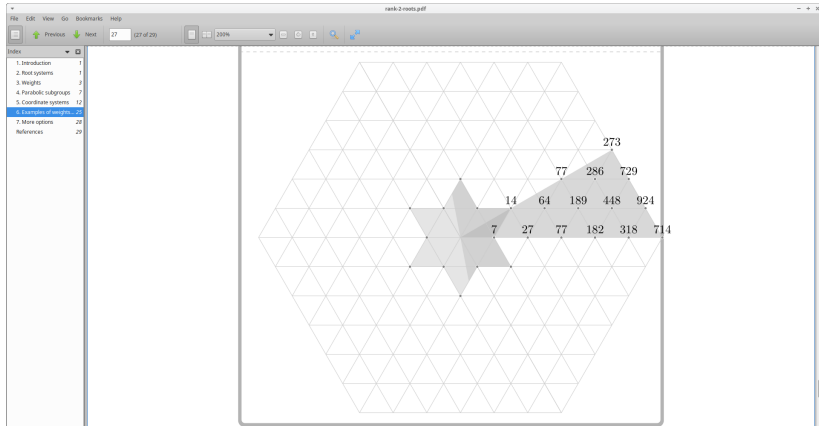
TL2024, Petr Olšák

- ▶ OPtex,
- ▶ OPmac,
- ▶ OPbible.

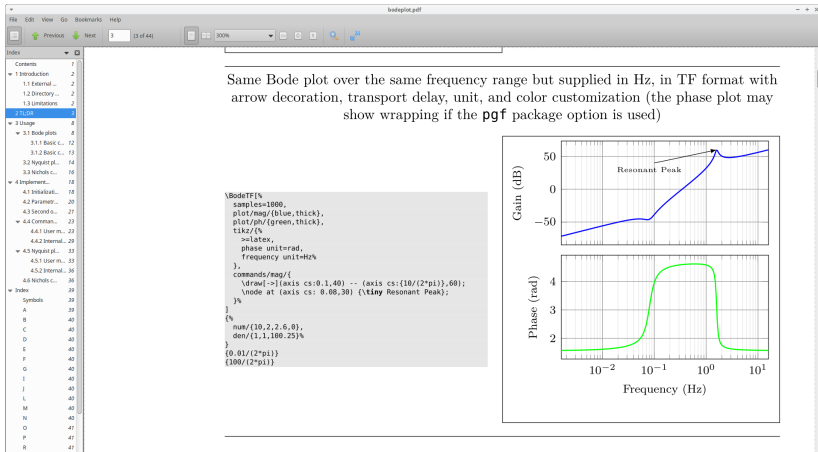
TL2024, grafy a grafika

- ▶ rank-2-roots,
- ▶ bodeplot,
- ▶ mcf2graph,
- ▶ wheelchart,
- ▶ mptrees,
- ▶ liftarms,
- ▶ tikzbricks.

Balíček rank-2-roots



Balíček bodeplot



Balíček mcf2graph

mcf_manual.pdf

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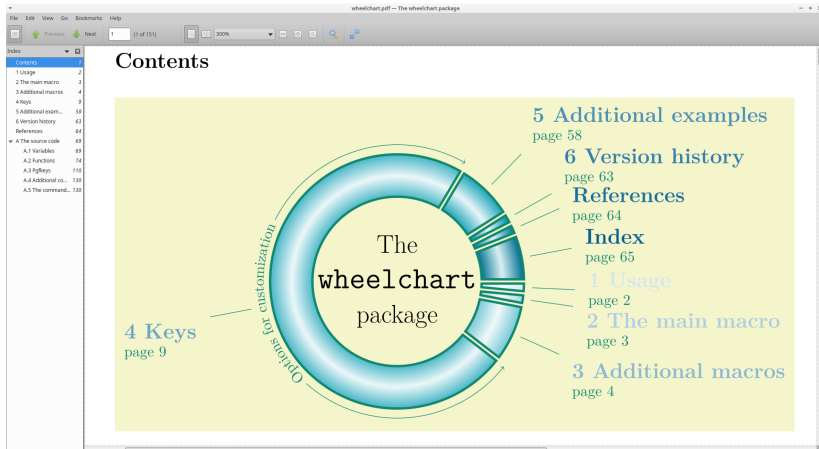
- Offset thick... 9
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Chemical structure diagram of a complex molecule, likely a steroid or related compound, showing multiple rings and functional groups.

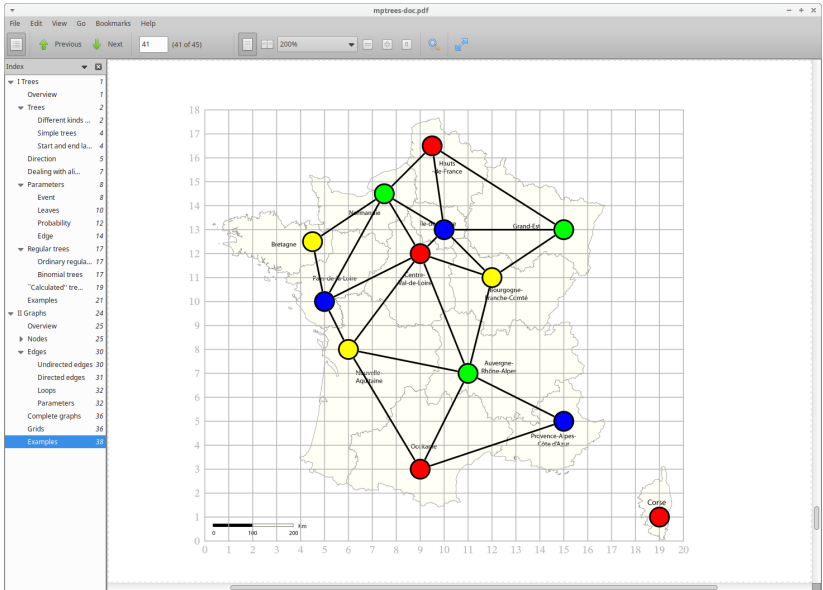
```
<55,8,76,-4=77,{-4,-3,-3,-3}=76,@-3,\,13,76,{-4,-3,-3,-3}=76,@-3,\,76,-3=76,
@-3,\,13,60,<-30,76,-3=76,@-3,30,<30,76,{-3,-3}=76,-3=77,{-4,-3,-3}=76,
@-2,\,76,-3=76,-3=77,{-3,-3}=76,-3=78,-3=d1,{-5,-3,-3,-3}=76,
{5,7,15,16,23,24,32,40,41,48,49,58,59,72,73,82,83,90,91,99,
100,107,113,114,122,123,130,131,140,141,148,149}:0,
{1^60,2,26,28,29,51,54,61,63,68,75^60,78,109}:*/OH,
{11,20,35,45,52,55,65,69,86}:/*OH,
{3,8,13,17,21,33,38,42,56,70,84,92,101,106,111,128,138,142,146,150}:/*H^-60,
{4,14,22,34,39,43,47',57',71',81,89,98,102,116,121,125,129,133}:*/H^60,
{6,46,50,53,60,67,74}:*/H^-60,
{9,18,85,93,112,139,143,147}:*/_60^1,{80,88,97,108',115,120,124}:/*_60^1,
@ $6,\,1,11,60-dr,-60,60,OH,{2',7,10}:*/OH,{1,3,8'}:*/_11:/_12:/_12,
@6,\,0,30,S03Na,
@ $36,-45-zf,0,30,S03Na,
@ $150,\,1,17,{1,2}:*/OH,4:*/_5:/_7=d1
```

** EN:Maitotoxin mw:3425.86 MW:3425.856 fm:C164H256Na2O68S2

Balíček wheelchart



Balíček mptrees



Balíček liftarms

liftarm.pdf — The liftarm package

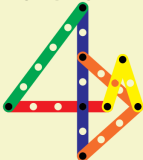
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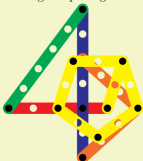
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3. Here appears the first side of the regular pentagon.

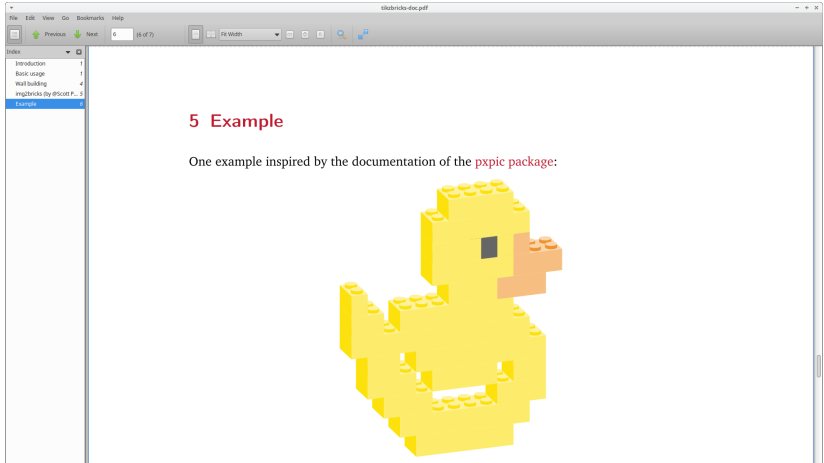


4. Now we end the construction of the regular pentagon.



```
\end{liftarmconnect}
}
\end{tikzpicture}
\end{center}
\item Now we end the construction of the regular pentagon.
\begin{center}
\begin{tikzpicture}[scale=0.7]
\liftarmconstruct{
\begin{liftarmconnect}
\liftarm[coordinate=2/D]{C}{2}{180}
\liftarm[coordinate=2/D,mark holes={0,2}]{-1,0}{2}{80}
\end{liftarmconnect}
\begin{liftarmconnect}
\liftarm[coordinate=2/E,mark holes=2]{-1,0}{2}{-80}
\liftarm[coordinate=2/E]{B}{2}{210}
\end{liftarmconnect}
}
\end{tikzpicture}
\end{center}
\end{enumerate}
\end{minipage}
```

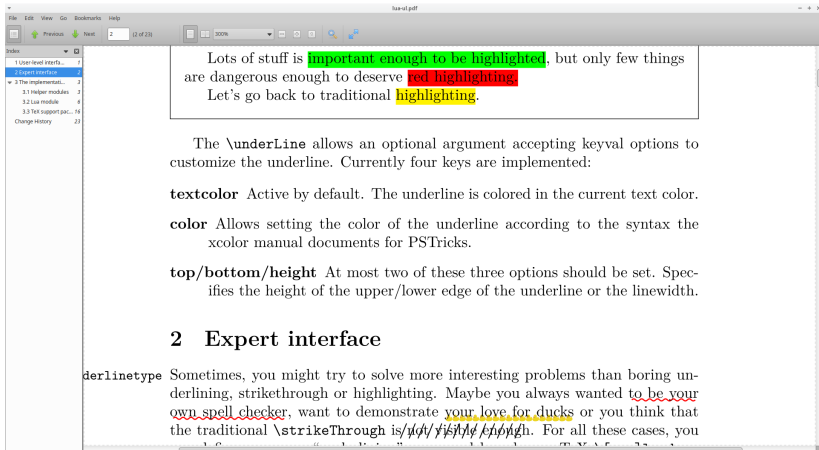
Balíček tikzbricks



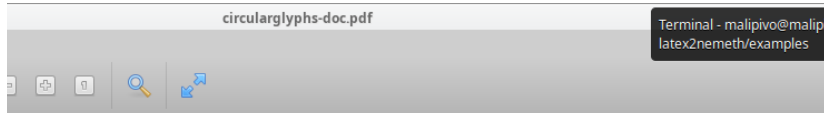
TL2024, typografie

- ▶ lua-ul, dříve balíčky soul, ulem,
- ▶ circularglyphs,
- ▶ witharrows,
- ▶ fvextra, nad balíčkem fancyvrb.

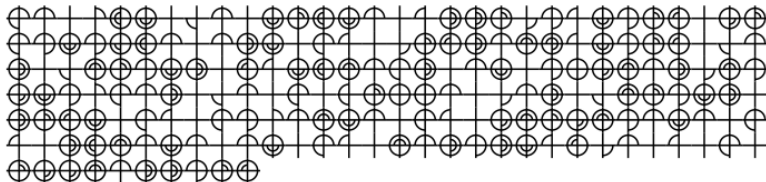
Balíček lua-ul



Balíček circularglyphs



Article n°2 de la Déclaration des Droits de l'Homme et du Citoyen de 1789 :



Article n°3 de la Déclaration des Droits de l'Homme et du Citoyen de 1789 :



Balíček witharrows

environment are grouped on a same vertical line and at a leftmost position.

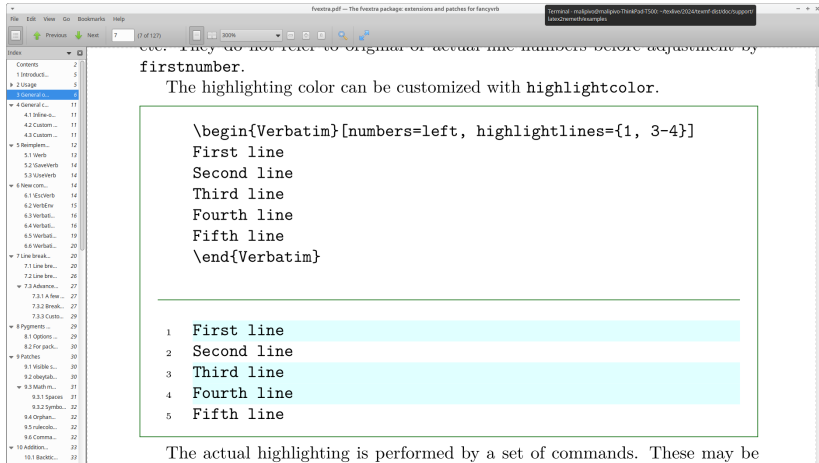
```


$$\begin{aligned}
& 2xy' - 3y = \sqrt{x} \\
& \Leftrightarrow 2x(K'y_0 + Ky'_0) - 3Ky_0 = \sqrt{x} \\
& \Leftrightarrow 2xK'y_0 + K(2xy'_0 - 3y_0) = \sqrt{x} \\
& \Leftrightarrow 2xK'y_0 = \sqrt{x} \\
& \Leftrightarrow 2xK'x^{\frac{3}{2}} = x^{\frac{1}{2}} \\
& \Leftrightarrow K' = \frac{1}{2x^2} \\
& \Leftrightarrow K = -\frac{1}{2x}
\end{aligned}$$


```

we replace y_0 by its value
simplification of the x
antiderivation

Balíček fvextra, nad fancyvrb



etc. They do not refer to original or actual line numbers before adjustment by **firstnumber**.

The highlighting color can be customized with `highlightcolor`.

```
\begin{Verbatim}[numbers=left, highlightlines={1, 3-4}]
First line
Second line
Third line
Fourth line
Fifth line
\end{Verbatim}
```

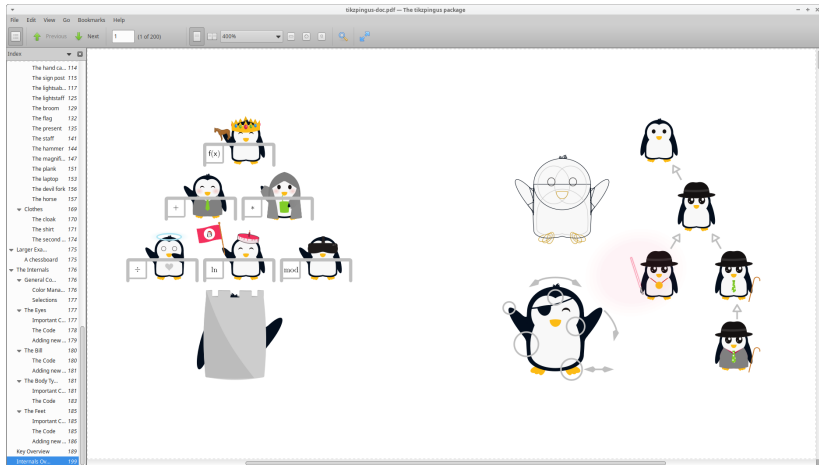
```
1 First line
2 Second line
3 Third line
4 Fourth line
5 Fifth line
```

The actual highlighting is performed by a set of commands. These may be

TL2024, postavičky, ikony

- ▶ tikzpingus,
- ▶ tikzlings,
- ▶ rpgicons.

Balíček tikzpingus



Balíček tikzlings

wheelchart.pdf — The wheelchart package












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- A The source code

11 animals from the package tikzlings

	bear		elephant		penguin
	bee		koala		snowman
	bug		owl		squirrel
	cat		panda		

Balíček tikzlings

The TikZlings package is a collection of cute little creatures which can be used with TikZ in many different situations. Figure 1 shows a family portrait of all of them.



Balíček rpgicons

File Edit View Go Bookmarks Help

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300%

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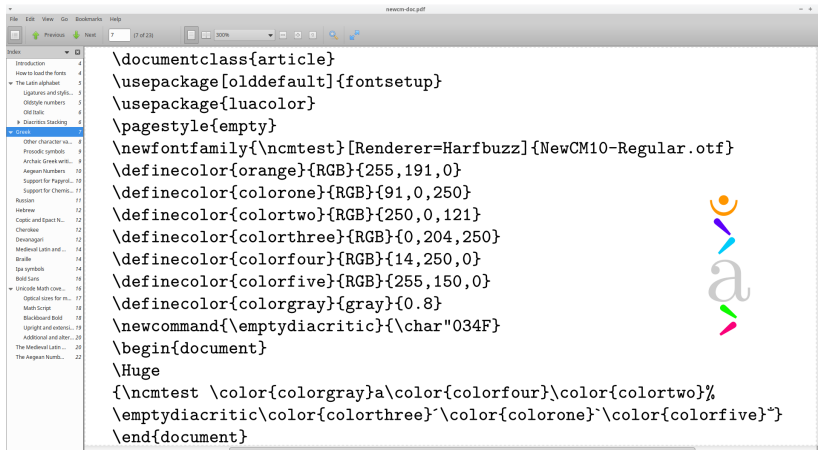
- Introduction 1
- Loading the package 1
- Dependencies 2
- Main user commands... 2
 - Command \die 2
 - Commands \ability... 3
 - Command \spell 4
 - Command \spells... 4
 - Commands \status... 5
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 - Icon commands 6
 - Icon options 7
 - Setting options globally 8
 - Roll dice syntax 9
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 - Setting styles locally 11
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 - Boxing of icons 12
 - Icons as pics 12
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		thunder
		healing
\attack		melee
		ranged
		magic
		singlehanded
		doublehanded
\condition		buff
		blinded
		charmed
		deafened
		exhausted
		frightened
		grappled
		incapacitated
		invisible
		paralyzed
		petrified
		poisoned
		prone
		restrained

TL2024, písma

- ▶ junicode,
- ▶ inconsolata nerd font,
- ▶ new computer modern fontfamily, srovnání lze přes balíček unicodfonttable.

Písmo New Computer Modern, balíček fontsetup



TL2024, pro postižené

- ▶ spelatex, Speech-enabled L^AT_EX,
- ▶ colorblind, více viz <https://personal.sron.nl/~pault/>,
- ▶ latex2nemeth, balíček unicode-math, dokument unicode-math-braille, dříve balíček braille.
Podporovaný projekt č. 33 TUGem, viz <https://tug.org/tc/devfund/grants.html>.

Baliček colorblind

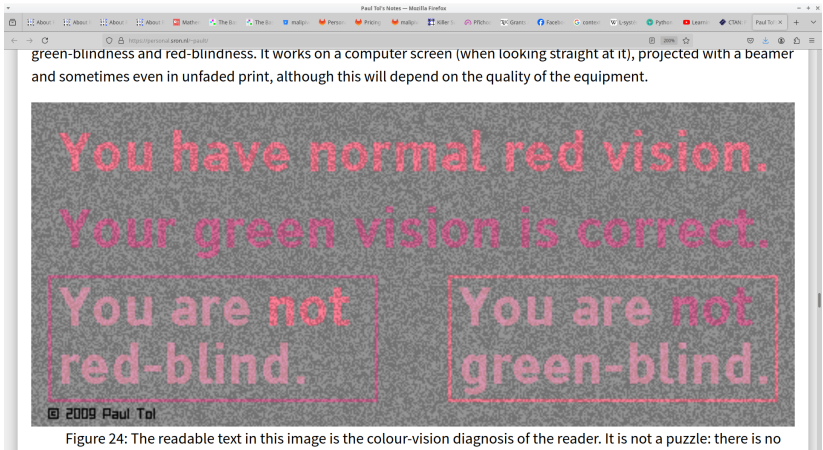
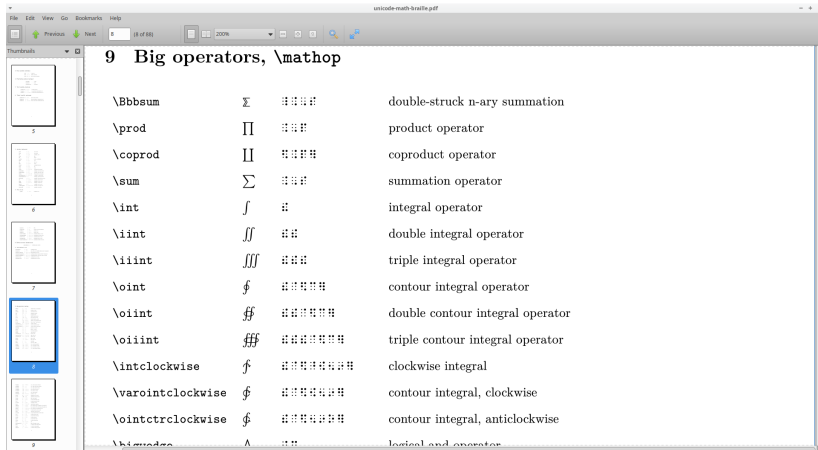


Figure 24: The readable text in this image is the colour-vision diagnosis of the reader. It is not a puzzle: there is no

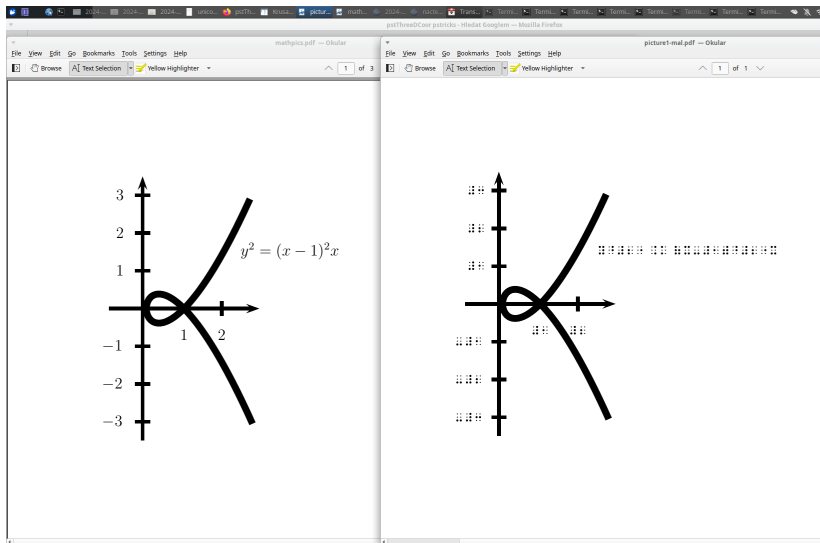
Rodina Unicode Math Braille

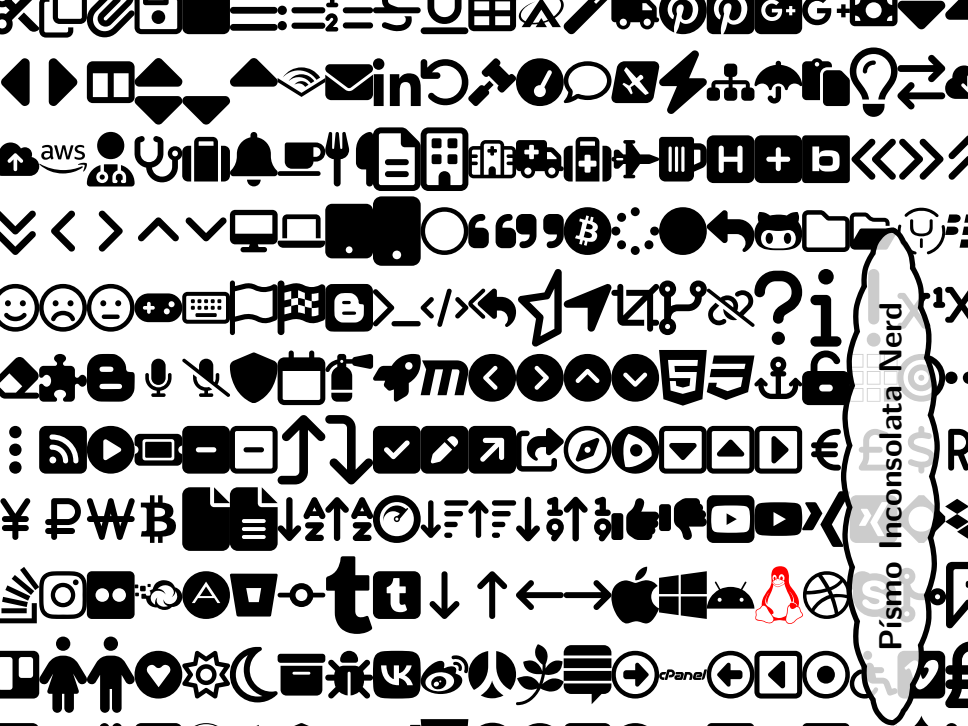


The screenshot shows a PDF viewer window titled "unicode-math-braille.pdf". The left sidebar displays a list of thumbnails, with the current page (page 8) highlighted. The main content area shows the title "9 Big operators, \mathop" followed by a table of LaTeX commands and their corresponding Braille representations.

Command	Unicode Symbol	Braille Representation	Description
<code>\Bbbsum</code>	Σ	$\mathbb{\Sigma}$	double-struck n-ary summation
<code>\prod</code>	Π	$\mathbb{\Pi}$	product operator
<code>\coprod</code>	\amalg	$\mathbb{\amalg}$	coproduct operator
<code>\sum</code>	Σ	Σ	summation operator
<code>\int</code>	\int	\int	integral operator
<code>\iint</code>	\iint	\iint	double integral operator
<code>\iiint</code>	\iiint	\iiint	triple integral operator
<code>\oint</code>	\oint	\oint	contour integral operator
<code>\oiint</code>	\oiint	\oiint	double contour integral operator
<code>\oiint</code>	\oiint	\oiint	triple contour integral operator
<code>\intclockwise</code>	\int	\int	clockwise integral
<code>\varointclockwise</code>	\oint	\oint	contour integral, clockwise
<code>\ointclockwise</code>	\oint	\oint	contour integral, anticlockwise
<code>\bigwedge</code>	\bigwedge	\bigwedge	logical and operator

Balíček braille





Písmo Inconsolata Nerd